A WEB PORTAL on ETHIOPIAN AGRICULTURE: IPMS EXPERIENCE on WWW.EAP.GOV.ET

Fanos Mekonnen[1], Ermias Sehai[1], Azage Tegegne[1], Dereje Tsegaye[2]

[1]International Livestock Research Institute, P.O.Box 5689, Addis Ababa

[2]Ministry of Agriculture, P.O.Box 62347, Addis Ababa

Abstract

This paper provides an overview of the Improving Productivity and Market Success (IPMS) project experience on developing an agricultural web repository that facilitates agricultural knowledge sharing and thus supports the agricultural extension service in Ethiopia. The paper describes the process IPMS went through to develop the agriculture web portal, status of the portal, challenges faced, experiences gained and lessons learned. Then, concludes by discussing the significance and sustainability of such an ICT based tool to increase the efficiency of agricultural extension service in the newly designed agricultural growth and transformation program of Ethiopia

Key words: agriculture portal, online resources, ICT, Ethiopia

NTRODUCTION

Background

This paper traces the development of an online information and knowledge-sharing portal – the Ethiopian Agriculture Portal (EAP) that was developed by the Improving Productivity & Market Success of Ethiopian Farmers (IPMS)-a five-year project funded by the Canadian International Development Agency (CIDA) and implemented by International Livestock Research Institute (ILRI) on behalf of the Ethiopian Ministry of Agriculture (MoA). EAP is one of the outputs of the knowledge management pillar of IPMS project. EAP with a web address of www.eap.gov.et, is a web-based gateway to agricultural information resources relevant to Ethiopian agriculture. It is hosted on a server at the data centre of the federal Ministry of Agriculture. The EAP strives to provide comprehensive, accurate and reliable information resource on Ethiopian agriculture. Resources on EAP include; downloadable full documents in English and other local languages, links to various websites of institutions, organizations, projects and other useful resources working on Ethiopian agriculture and many other useful links.

This assessment was made with the purpose of documenting the experience of setting up an ICT supported tool such as the EAP and to draw lessons to understand the usefulness of such a tool in the agricultural extension system of Ethiopia. This paper looks into i)the processes of developing the portal ii)the content, iii)promotional efforts, iv)the extent of utilization by targeted audience to gauge whether availing an online portal has improved access to relevant knowledge and information for the intended audience, and v) issues of institutionalizing it in the MoA.

A web portal for agricultural extension service

Agriculture is an important engine of economic growth in Ethiopia, yet yield has stagnated for many decades due to several reasons. Of the potential mechanisms to boost yield, use of improved agricultural technologies such as improved inputs and animal husbandry system are prominently practiced by the public agricultural extension system in place. Eventhough, attempts are made to facilitate adoption of technologies and systems through the extension services, access to adequate information on these technologies is a challenge for most development practitioners at grassroots levels. Therefore, achieving significant impact on technology adoption or behavioural change on production systems over a wide area is still a challenge in Ethiopia.

Agricultural knowledge is crucial for achieving productive, remunerative and sustainable agriculture development in Ethiopia (Tesfaye et al, 2011). However, many development practitioners face a challenge in accessing timely and relevant agricultural knowledge resources, especially those that are country (Ethiopia) specific. This is not because there is not enough resource in the country; on the contrary, there is substantial and valuable amount of resource in various institutions – Research, Universities, NGOs, projects, etc. However, it is usually difficult for development practitioners to have access to resources they require because, either they don't know the whereabouts of that particular information, it's too costly in terms of time and resource, or they don't know whom to contact in a particular organization. At times, there are cases when all of the above mentioned happens, especially for many public documents that are

valuable but only available in hard copies at specific organization or in the hands of few individuals.

The rapid evolution of Information and Communication Technologies (ICT) is creating numerous opportunities for providing new standards of quality in agricultural extensions service and support the extension system. Therefore, IPMS project selected one of the ICT tools, Internet based web portal, to bridge the gap and avail easier access to agricultural knowledge countrywide. IPMS together with MoA and other stakeholders set off to avail a gateway to agricultural information and knowledge on Ethiopian agriculture, which will support the extension system by providing information resources on what happens near and far in all areas that are relevant. The need for designing own portal was considered to avail valuable documents from the ministry of agriculture and elsewhere which are not digitized and thus available only in few circulations. In addition, having a portal with focused resources on Ethiopian agriculture seemed to create efficiency and relevance for the envisaged audiences.

The ultimate aim of the IPMS project in availing such a portal is to contribute to the market oriented agricultural development strategy of the country. Specific objectives considered while designing the EAP were

- Increasing ease of access to up-to-date and valuable information resources
    - digitizing valuable resources that are only available in hard copies
    - availing resources on good practices, research outputs, and capacity building manuals prepared in English and other local languages.

- availing national and international information sources on agriculture; links to key research and development partners and status of ongoing projects under one gateway
- increasing interactions among the various stakeholders in Ethiopian agriculture through creating a knowledge sharing platform
- developing the human resource capacity at MoA to share and disseminate agricultural knowledge

THE APPROACH

At the start of the project implementation, IPMS developed a holistic system that supports knowledge sharing at national level through establishing a *'National Agricultural Information Resource Centre (NAIRC)'*. NAIRC aimed at setting up a comprehensive repository of leading practices, research outputs, and training materials -- initially on priority commodities such as dairy, beef cattle, coffee, cereals and pulses, make it accessible to extension experts, researchers, and educators. IPMS project designed NAIRC to be realized in three main phases;

Phase 1: Network infrastructure and data centre upgrade: that included setting up servers for email, and for system management; basic network connectivity and developing a content management system for Ethiopian Agriculture Portal.

Phase 2: Providing appropriate training to staff at federal, regional and district level. Capacity development activities varied from basic computer skills at district levels, to higher-level network and server application at federal level. In addition, capacitating a content manager, one who liaises with various content providers for EAP.

Phase 3: Developing a web-based repository of research output and good practices guides on priority commodities. The repository uses a content management system that provides flexibility and better access for information sharing. Such a content management system enables users to post and share documents or web content with other users even when they are geographically dispersed. Much of the focus of this paper is on this phase (three) and onwards.

OUTPUTS AND OUTCOMES OF EAP

Design considerations

In 2005, IPMS developed the first web portal of EAP after liaising with the extension department of MoA regarding priority commodities and type of resources to put on the portal.

Ease of use, ease of maintenance, ability to scale-up, and sustainability were some of the design parameters considered during development of this portal. The portal uses a content management system that is relatively easy to handle – even for non-web technologists. Simplicity was opted for in response to the existing human resource capacity at the public sector. However, although it is easy to use, a powerful database engine that can easily accommodate a large number of documents drives the system. In early 2011, IPMS together with MoA released an upgraded version of the portal that contains dynamic and interactive features such as search, events and social media tools.

Figure 1: homepage of EAP

Infrastructure

IPMS project supported upgrading of the MoA data centre, including the provision of servers and associated software for web hosting, database servers, email servers, and security management servers. Although, MoA's current headquarter have a well-equipped ICT data centre, the ICT infrastructure components provided by IPMS are still in regular use. Currently MoA have a 20 Mbps broadband Internet connection, which should serve its current needs adequately and creates a favourable environment to host EAP. Availing continuous supply of electric power at the ministry is a work in progress, which will add up to continuous, access of the portal seven days a week. Development of EAP required financial and human resource and organizational commitment with the associated investment that entailed. The financial resource needed to establish the portal included both direct upfront costs for setting up the system and ongoing operational cost to maintain it. In general, the development of the EAP is more of a process that continues rather than a onetime activity. The start up phase of setting up networks

and wiring of data centres in the MoA has evolved into an online and offline knowledge-sharing tool, which was more of a collaborative effort of many stakeholders, mainly the MoA.

Content management

Successful implementation of a system requires attention to the people, process, and technology that together make up a well functioning system. Accordingly, while the technology infrastructure for the portal is capable of supporting a robust system, its real value only becomes apparent when there is content that meets the needs of the target audience. IPMS in its project life have supported the provision of IT technician as well as content manager who are responsible for various aspects of maintaining the portal. As far as content is concerned, a full time IPMS staff that functioned as portal content manager facilitated the acquisition, selection, and upload of content from various stakeholders on various topics of crops, livestock and natural resources development. In 2008, additional content managers responsible for identifying and uploading relevant documents from their respective units were selected from various directorates of MoA. The experience so far is that this arrangement has not been fruitful. The lesson learned from this attempt is that content managers cannot be effective unless this task is an official duty of their full time or part time job assignments.

In the past few years, more databases that are handled by the ministry e.g. REDFS, FAO, SLM and EAP are emerging and demanding for a content coordinator. This entails a need for change in the organizational structure at the Ministry, which is an opportunity to have a full time/part-time coordinator for EAP.

Accessing and Utilizing EAP

Targeted audience of EAP are researchers, development practitioners, policy makers, students, investors, importers and exporters in need of information on Ethiopia agriculture. EAP avails resources that are open access and applicable. Another unique feature of EAP is that it avails resources in local languages (Amharic, Tigrigna and Oroomiffa) along with those written in English so that potential users with diverse knowledge can still make use of the portal. In addition to this, web links and information of various organizations, institutions, and projects working on Ethiopian agriculture are availed on EAP and any organization with similar affiliation is welcome to put the link of EAP on its website. One good example is official website of MoA www.moa.gov.et that put link of EAP on its home page.

Assessment results showed that many professionals in the field of agriculture found the EAP a very effective tool to significantly support the extension service delivery by capacitating experts at frontline with required up-to-date knowledge resources. Visitors of EAP include MSc students working on their thesis, development agents planning farmer training, and foreign investors looking for technical and marketing resources on agricultural commodities of Ethiopia. However, first hand targets; staffs of MoA, visit the EAP less frequently as compared to others outside.

User statistics of seven months data, March –September 2011 shows that EAP entertains on average a thousand visitors per month. Figures displayed here might not be that impressive considering the current amount of Internet utilization around the world. However, the context at

which EAP is deployed- poor internet connection, frequent power outage and insufficient skilled human recourse, should be taken into consideration.

In addition to the online hosting of EAP, IPMS supplied servers to regional and zonal bureaus of agriculture so that they can access the offline versions locally in their knowledge centres. The project also distributed offline version of the portal on DVDs to increase the option for potential audience of the portal with limited or no Internet connectivity. Extension staff working in project sites showed greater preference of the offline versions to the online version. A challenge faced with offline version, however, is that most software for this purpose is licensed and need payment to get service. Currently IPMS and MoA are working on finding alternatives to develop an offline version of EAP that is free from those challenges.

Ownership

Though many involved on development of EAP, the ultimate owner is the MoA. At the development stage of the portal, many of the key stakeholders (but not all) were consulted and attempts were made to craft a shared vision. However, some key potential stakeholders like EIAR were not in the initial planning process. This resulted in omission of potential beneficiaries/ contributors.

Promotion and institutionalization

IPMS used different activities such as workshops, knowledge fairs, conferences, exhibitions…etc to promote EAP. Knowledge centres of the project in districts, zones and regions promoted EAP further by hanging banners of EAP, making EAP the home page of

computers at the centres, and encouraging development agents to use the portal as a gateway while looking for agricultural knowledge. IPMS further promoted EAP to extension staff at MoA in various occasions such as; trainings, technology exhibitions and seminars. Positive reactions during the promotions confirmed the demand for such a resource among various audiences and the need to pursue this initiative further.

As IPMS is a project with fixed terms, it has developed an exit strategy and mainstreaming of EAP into MoA. Exit strategies include capacity development of key MoA staff, hiring a full time technician to provide support on the portal, promotion of the EAP in various institutions and agricultural organizations. To institutionalize EAP, IT department of MoA was given the lead, from the start, to deal with issues of hardware with certain technical support from IPMS. So far, good results were reported. As far content coordination, communications with extension directorate is underway so that the directorate fully takes responsibility on this respect.

CONCLUSION

To provide significant extension service, the extension system needs to be continually aware of what is going on. Therefore, availing access to diverse sources of information resources and documents through the Internet and other means enables the system to respond better to experts and farmers' information need. In addition, setting up an agricultural repository that is accessible to all with relevant documents and information reduces redundancy of efforts by various

organizations and institutions. This also increases communication and collaboration among organizations for efficient agriculture development efforts

The timing of IPMS to deploy EAP at MoA back in 2005 seemed early, considering the lack of widespread awareness on the use of online resources among extension experts and the human resource challenges at MoA. On the other hand, looking at the progress in the few years, one can say that the EAP started at about the right time. EAP created a learning environment for MoA and IPMS project on setting up a web-based document repository with relevant agricultural documents. EAP has also been a springboard for designing an efficient agricultural knowledge management system in MoA. Currently, as compared to the years in 2005, the environment at the MoA is quiet favourable with all facilities and structure to develop a database in place. Since the past two years, MoA data centre is hosting many databases. This creates an opportunity for further development of the EAP into an even more rigorous and dynamic agricultural web portal in the near future.

The assessment shows that, enabling environment, such as Internet connectivity, power supply, support from decision makers and availability of financial resources are determining factors for development and sustainable access of an agriculture web portal.

A lesson to take from this assessment is that there is a need to have a clear strategic vision for developing a portal that is useful and sustainable. This strategic vision needs to be shared among all stakeholders – including those who develop a portal, fund such a portal, maintain and operate a portal and ultimately use a portal. Confusion or misunderstanding among any of these

important actor results in decision that ultimately influences the portal long after it is developed and deployed.

REFERENCES

Aker,J.C. 2011. Dial "A" for Agriculture A Review of Information and Communication Technologies for Agricultural Extension in Developing Countries. CGD Working Paper 269. Washington, D.C.: Center for Global Development. http://www.cgdev.org/content/publications/detail/1425497 accessed on October 7, 2011

Google analytics for Ethiopian Agriculture portal.

IPMS. 2006. Six monthly project progress report (April- September 2006). http://www.ipms-ethiopia.org/Documents-Publications/Reporting/Progress-Reports.asp accessed on October 1, 2011

IPMS. 2010. Improving productivity and Market Success; Monitoring and evaluation report of year 4 (2008/2009). http://www.ipms-ethiopia.org/Documents-Publications/M-&-E-Reports.asp accessed on September 15, 2011

Tesfaye LT, Ermias S., H, D. 2011. Knowledge Centres in the Pilot Learning Woradas of Improving Productivity and Market Success Project: Utilization, Relevance and Effectiveness. http://www.ipms-ethiopia.org/Focus-Area/Knowledge-Management/Publications.asp accessed on October 1, 2011